contents it may be stated that the first five chapters deal with fundamental principles of electricity and magnetism, the next four with the theory of direct-current dynamos and motors; these are followed by a single chapter on alternating-current theory, a chapter on transformers, four chapters on alternating-current generators and synchronous motors, and four chapters on induction motors. The book concludes with a few pages devoted to rotary converters, and an appendix on the symbolic method of treating vectors.

The matter is well arranged and clearly set forth. Considerable space is taken up by the various types of direct-current armature windings, illustrated by several good diagrams, and the important question of sparking receives proper attention.

The treatment of alternating-current generators is good, but it seems questionable whether students should be taught to look upon the magnetising current in the field windings of an alternator as a vector quantity. With this exception the section devoted to the behaviour of such machines on loads with various power factors is excellent, and the discussion of parallel running is particularly clear. Induction motors are considered in the light of the semicircle diagram with a good deal of theoretical elaboration, and single-phase commutator motors are mentioned briefly.

Taken as a whole, the book will probably strike electrical engineers as being somewhat too theoretical. It does not claim to go beyond the principles of the subject, leaving aside altogether constructional details. There are, however, many items of information which could be given without any trouble, and which would give a greater reality to the student's ideas. Thus, for instance, it seems a pity that a budding electrical engineer should arrive at the end of the book without ever having been told that electrical apparatus must satisfy the requirements of a temperature specification. There should be no need for a man to go through a course of dynamo design to learn this elementary but important fact.

A word of praise may be given to the translator, who has done his work with marked success; it is sufficient to say that the book does not read like a translation form the German, and all who have done such work will agree that this is high praise.

(2) This is another book for the use of students, but it is intended not only for those taking a special electrical course, but also for others studying general engineering. With this object in view, the authors have endeavoured to differentiate between the two classes of readers, by giving in appendices and in several special sections in small type what they call the more elaborate developments of the subject. This seems a good plan, and it is well carried out.

The authors are professors in Lehigh University, and the book, in consequence, caters especially for the American engineer. Apart from this, the present volume may be thoroughly recommended to students in this country, on account of the practical nature of the information contained therein. For example, the authors are not content with tracing through the preliminary theory of the direct-current generator and then leaving the subject at that point, as so many English text-books do, but they go on to discuss what limits the output of a generator in actual practice, and give a chapter on ratings and guarantees. As a whole, the book is far more in touch with practical conditions than the usual examples of this class of literature.

The present volume is confined to the study of direct currents, their generation, distribution, and utilisation for lighting. The first part is devoted to elementary theory, the theory of dynamo machines, the practical aspect of such machinery, including its rating and performance guarantees, its control by switchgear, and its operation alone and in conjunction with storage batteries. The second half contains chapters on distribution and wiring, on photometry and electric lighting, and four appendices on the magnetisation of iron, on characteristic curves, on armature windings, and on problems illustrating the contents of the whole volume.

The book will no doubt serve its particular purpose admirably, but so far as this country is concerned it is unfortunate that the slight differences between English and American practice are sufficient to deter many students from purchasing a book of considerable value in its own country.

OUR BOOK SHELF.

Modern Lithology, illustrated and defined, for the use of University, Technical, and Civil-Service Students. By E. H. Adye. Pp. 128. (Edinburgh and London: W. and A. K. Johnston, Ltd., 1907.) Price 10*s.* net.

THE excellent microscopic drawings of rock-sections previously issued by Mr. Adye (see NATURE, vol. lxxi., p. 341), in a work entitled "The Twentieth Century Atlas of Petrography," prepare us for the present series of sixteen smaller plates. With four coloured figures on each, some of them subdivided into two semicircles, we have a wide range of rocks accurately and artistically represented. The drawing and description of thin sections is not strictly "lithology," however "modern" it may be; but Mr. Adye deals with the illustrations clearly in the accompanying text. He also gives a glossary of petrographic terms, which contains many useful references to original papers.

The definitions of the crystallographic systems are, as often happens in elementary books, far too limited, and would exclude copper pyrites, for example, from the tetragonal system, and hemimorphite from the orthorhombic. If, moreover, rhombohedral and hexagonal are to be taken as synonymous, as stated on p. 97, there is no place under the definition given for such common minerals as quartz and calcite. A crystallographic "pyramid" (p. 111) cannot nowadays be regarded as a closed form. The glossary, as a whole, however, is a mine of information, and every geologist may read it with advantage. "Tachylite," here and on p. 18, should be "tachylyte"; but this correction has been made again and again without result in geological literature. Few misprints occur; we notice "Jannetez," "Bôricky," "Radanthal," and *Galionella*.

There is no strict arrangement in the subjects on the plates, and, as we have hinted, no attempt has been made at writing on lithology in the broad sense. But the book, with its complete index, is a really good companion for those who require guidance in studying the characters presented by thin sections. No small

work has hitherto given us so effective a series of coloured petrographic illustrations. We are thus not quite sure about the description of the pyroxene-andesite from Bohemia on plate v., because the drawing so closely resembles the rock of Tichlowitz, with its brown hornblende in the groundmass, its monoclinic pyroxene, and its patches of zeolites as the only pale constituents. Again and again we could name the locality of the rock selected from the accurate details of the illustration; and when we turn to the descriptive text, we find very little room for criticism. G. A. J. C.

Inflammation. An Introduction to the Study of Pathology. Being the reprint (revised and enlarged) of an article in Prof. Allbutt's "System of Medicine." By Prof. J. George Adami. Pp. xvi+240. (London: Macmillan and Co., Ltd., 1907.) Price 5*s.* net.

REPRINTS in book form of articles appearing in larger volumes are not always desirable, but in the present instance so much has been added to the matter as virtually to constitute a new work. We congratulate Prof. Adami heartily on the successful issue of an arduous task; no one knows how difficult until he attempts to write on inflammation. The subject of inflammation, forming, as it does, the fundamental basis of pathology, and it might be said also of the science and practice of medicine, is beset with difficulties. The literature on it is voluminous and bewildering, and pathologists owe a debt of gratitude to Prof. Adami for having the courage to attack it. The matter is divided into sections; the first gives a general survey of the inflammatory process, the second deals with the various factors of the process—the part played by the leucocytes, the exudate, the blood-vessels, the nervous system, cells of the part, and the temperature changes; the third section deals with general considerations, and includes a chapter on the principles of treatment of the inflammatory state. Every statement made is based on published work, to which the reference is appended (and the book therefore forms a valuable bibliography on the subject of inflammation), and critical additions and summaries are liberally interspersed. The book is well and sufficiently illustrated, and no student of pathology can do without it. R. T. HEWLETT.

Notes on Maritime Meteorology. By Commander M. W. Campbell Hepworth, C.B. Pp. viii+90; 7 plates. (London: George Philip and Son, Ltd., 1907.) Price 2*s.* 6*d.* net.

THIS work consists of papers contributed to societies and institutions between 1883 and 1900, compiled while the author was on active service afloat. Two of them, occupying nearly half the book, are of a more general nature than the rest, and deal with meteorology as a factor in naval warfare and with the value of meteorological observations at sea. The author contends that, given two opposing fleets equal in all respects, "the victory in a series of engagements shall be to the fleet in the direction of whose movements meteorology shall have given the greatest aid," and some striking instances are cited of the value of weather knowledge. The other papers are of a more special character, and relate chiefly to the navigation of the Indian and Pacific oceans. Taken in connection with the useful charts dealing with the marine meteorology of those oceans published by the Admiralty and the Meteorological Office, the results of investigations by so experienced a seaman and so keen an observer as the author of the work in question will be of great interest and value to those now afloat.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Mu'attos.

MR. H. G. WELLS, in his interesting book "The Future in America" (1906), tells (pp. 269–270) a story at second-hand which apparently, however, he accepts as accurate in perfect good faith. I transcribe the facts as they were given to him:—

"A few years ago a young fellow came to Boston from New Orleans. Looked all right. Dark—but he explained that by an Italian grandmother. Touch of French in him too. Popular. Well, he made advances to a Boston girl—good family. Gave a fairly straight account of himself. Married."

The offspring of the marriage was a son:—

"Black as your hat. Absolutely negroid. Projecting jaw, thick lips, frizzy hair, flat nose—everything."

In this case Mr. Wells observes:—"The taint in the blood surges up so powerfully as to blacken the child at birth beyond even the habit of the pure-blooded negro."

This is, at any rate, ultra-Mendelian. Such a story would hardly be told and repeated unless it corresponded to popular belief. What one would like to have is precise evidence that such cases actually occur. If verifiable, it would be of great importance both on scientific and political grounds. I find, however, nothing resembling it in such authorities as I am able to consult. No such case is mentioned by either Darwin or Delage, though neither would have been likely to pass over such a striking instance of reversion had it been known to him. Sir William Lawrence, in his "Lectures on Physiology, Zoology, and the Natural History of Man" (1822), a book still worth consulting, has industriously collected (pp. 472–484) all the facts available at the time about mulattos, but has no instance of the kind.

The problem involved is thus stated by Galton ("Natural Inheritance," p. 13):—"A solitary peculiarity that blended freely with the characteristics of the parent stock, would disappear in hereditary transmission." He then discusses the case of a European mating in a black population:—"If the whiteness refused to blend with the blackness, some of the offspring of the white man would be wholly white and the rest wholly black. The same event would occur in the grandchildren, mostly, but not exclusively, in the children of the white offspring, and so on in subsequent generations. Therefore, unless the white stock became wholly extinct, some undiluted specimens of it would make their appearance during an indefinite time, giving it repeated chances of holding its own in the struggle for existence." *Mutatis mutandis*, the same law would hold for a black mating in a white population.

Lawrence quotes a single case (p. 279) in which a refusal to blend certainly existed:—"A negress had twins by an Englishman: one was perfectly black, with short, woolly curled hair; the other was light, with long hair." He also points out that in "mixed breeds" "children may be seen like their grandsires, and unlike the father and mother," a fact observed by Lucretius.

"Fit quoque, ut interdum similes existere avorum
Possint, et referant proavorum sæpe figuras."

On the other hand, according to Lawrence, there was a legal process in the Spanish colonies of South America by which a mulatto could claim a declaration that he was, at any rate politically, free from any taint of black blood. Of Quinterons, who were one-sixteenth black, he says:—"It is not credible that any trace of mixed origin can remain in this case," and even of Tercerons, who were one-quarter black, "in colour and habit of body they cannot be distinguished from their European progenitors." He says (p. 274) that Jamaica Quadroons "are not to be distinguished from whites." But "there is still a contamination of dark blood, although no longer visible. It is said to betray itself sometimes in a relic of the peculiar strong smell of the great-grandmother." If these statements can be relied upon, Galton's hypothetical law does not appear